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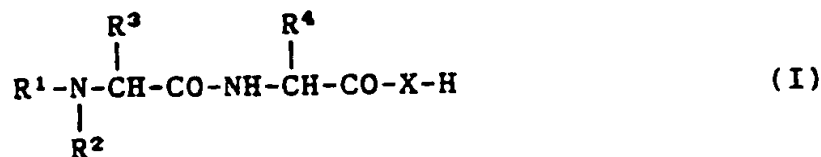
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54 Prophylactic and therapeutic agent for bone diseases comprising di- or tripeptide derivative as active ingredient.

57 Use of a compound represented by the following general formula (I):



wherein R¹ represents a straight or branched acyl group having 2 to 10 carbon atoms, a branched cyclic or bridged cyclic alkyloxycarbonyl group having 4 to 15 carbon atoms, a substituted or unsubstituted benzyloxycarbonyl group, a 2,2,2-trichloroethyloxycarbonyl group, a 2-(trimethylsilyl)-ethyloxycarbonyl group, a p-toluenesulfonyl group, an o-nitrophenylsulfonyl group, a diphenylphosphonothioyl group, a triphenylmethyl group, a 2-benzoyl-1-methylvinyl group or a 4-phenylbutanoyl group;

R² represents a hydrogen atom or forms a phthaloyl group together with R¹;

R³ represents an isobutyl group, an n-butyl group or an isopropyl group;

R⁴ represents an n-butyl group or an isobutyl group;

X represents a direct bond, a methionine residue, a leucine residue or a norleucine residue; and

H at the C-terminal means that the carboxyl group is reduced in the form of the aldehyde;

as an active ingredient for the preparation of a pharmaceutical composition useful in preventing or treating malignant hypercalcemia, bone Paget's disease or osteoporosis.

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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. CL.5)
Y	JOURNAL OF ENZYME INHIBITORS vol. 3, no. 3, 1990, HARWOOD, ENGLAND pages 195 - 201 SASAKI ET AL 'Inhibitory effect of di- and tripeptidyl aldehydes on calpains and cathepsins' * See the whole document * ---	1-4	A61K37/02 C07K5/08
Y	EP-A-0 393 457 (SUNTORY LIMITED) 24 October 1990 * See pages 2-3 * ---	1-4	
Y	EP-A-0 269 311 (MERCK & CO. INC.) 1 June 1988 * See page 2, Background * ---	1-4	
Y	BONE vol. 8, 1987, pages 305 - 313 DELAISSE ET AL 'The effects of inhibitors of cysteine-proteinases and collagenase on the resorptive activity of isolated osteoclasts' * See page 305, Introduction * ---	1-4	
A	PROCEEDINGS OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE vol. 183, no. 2, 1986, DULUTH, USA pages 262 - 267 DIPASQUALE 'Proteoglycan- and collagen-degrading enzymes from human interleukin 1-stimulated chondrocytes from several species: Proteoglycanase and collagenase inhibitors as potentially new disease-modifying antiarthritic agents (42416)' * See pages 262 and 265 * ---	1-4	
			TECHNICAL FIELDS SEARCHED (Int. CL.5)
			A61K C07K
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 19 FEBRUARY 1993	Examiner KORSNER S.E.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document I : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons * : member of the same patent family, corresponding document			



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A	JOURNAL OF BIOCHEMISTRY vol. 106, 1989, TOKYO, JAPAN pages 1035 - 1040 SAITO ET AL 'The neurite-initiating effect of a tripeptide aldehyde protease inhibitor on PC12h cells' * See page 1035, Abstract *	1-4	
A	PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, USA vol. 87, 1990, WASHINGTON pages 83 - 87 THIELE ET AL 'Mechanism of L-leucyl-L-leucine methyl ester-mediated killing of cytotoxic lymphocytes: Dependence on a lysosomal thiol protease, dipeptidyl peptidase I, that is enriched in these cells' * See page 83, Abstract *	1-4	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
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<p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons * : member of the same patent family, corresponding document</p>			